Solid Waste Management Plan

State of Louisiana

Department of Environmental Quality
Solid Waste Division

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Introduction

Purpose

This document is a revision of the Statewide Integrated Solid Waste Management Plan which was presented in conformity with SCR 75 to the Senate Action Subcommittee on Natural Resources, on March 1, 1993. It also replaces the draft guidance document for local governments (SWMPING) written for that program. The purpose of the Statewide Integrated Solid Waste Management Program is to provide technical and financial assistance to local governments in order for them to consider the benefits of developing and implementing multi-jurisdictional solid waste management programs. The resulting regional programs will constitute the statewide solid waste management plan required by Senate Concurrent Resolution No. 75 of 1992, and the Louisiana Resource Recovery and Development Act. (The preceding legislation requires that the Louisiana Resource Recovery & Development Authority (LRRDA) evaluate all new solid waste operations to ensure that they conform with the statewide solid waste management plan before issuing the Department of Environmental Quality a letter of "conformity to statewide plan" allowing them to proceed with the permitting process.)

Legislative History

The legislature has, on two different occasions, recognized the need to develop multi-jurisdictional solid waste regions. In 1980, it created the Louisiana Resource Recovery and Development Authority (LRRDA), with the authority to establish multi-parish regions for the collection, management and disposal of solid waste. The impetus for the original legislation was the concern that the demands of acceptable solid waste management exceeded the ability of most parish and municipal governments to effectivley fund the level of services necessary to collect and dispose of solid wastes in a healthful manner. The LRRDA legislation also ascribed to the benefits of large scale recycling and waste to energy operations.

> *That technology and methods now exist to reduce the solid waste stream and to dispose of the solid wastes and recover resources with commensurate environmental benefits on a cost effective basis if coordinated in large-scale regional processing and recovery operations.*
>
> §2302 (5)

The Act stipulates that the Authority will ensure that any new solid waste treatement operation conform with the statewide solid waste management plan.

The motivations which existed in 1980, are again being experienced today, with the exception that waste to energy never proved economically feasible in Louisiana. The new Subtitle D regulations of the federal Resource Recovery and Conservation Act are causing significant increases in the cost of disposal and treatment of solid waste. Large scale processing and disposal facilities are again seen as the most effective means for reducing the cost and maximizing the environmental benefits of solid waste treatment.

In 1992, the Legislature acknowledged that the new federal regulations (Subtitle D) were going to force the closure of a great number of municipal landfills and increase the cost of solid waste treatment to such a great extent that the state should prepare a solid waste management plan to ensure the continued availability of adequate capacity for proper and economical treatment of solid waste. On June 11, 1992, the Legislature issued Senate Concurrent Resolution No. 75 to the Louisiana Department of Environmental Quality (DEQ). This resolution requested DEQ develop and submit to the Legislature, an interim "State Wide Integrated Solid Waste Management Plan" (SWMP) by October 1, 1992, and a final plan by March 1, 1993. The Department met both of these deadlines. This document is a revision and update of the final plan that was delivered to the Legislature. These revisions were prompted by extensive discussions with citizens, Parish Police Jurists, Mayors and public and private solid waste treatment operators.

Another legislative act which has a direct bearing on the statewide integrated solid waste management plan is the Solid Waste Recycling And Reduction Law of 1989. This act established the goal of reducing the amount of solid waste landfilled in the state by 25%. The Act required that Parish governments submit solid waste reduction plans to the DEQ by December 31, 1992. These have been received and reduction efforts are underway in many parts of the state.

What Are the Benefits of Regionalizing Solid Waste Operations?

Two of the fundamental reasons, nationally, for the increased interest in developing multi-jurisdictional solid waste programs have been first, to help reduce the increasing costs of landfilling due to the new Subtitle D regulations and second, to ensure the contiuation of adequate landfill capacities as of the existing landfills which cannot satisfy the new stricter regulations are closed.

An investigation of these trends in Louisiana indicates that the cost of developing landfills has risen dramatically, and the number of remaining landfills in the state has dropped dramatically. The closing of over 97% of the state's local landfills and the escalating costs of waste treatment has placed a heavy financial and administrative burden on local governments in Louisiana as it has on the rest of the nation. One of the solutions to the escalating costs that has gained a lot of national attention, has been for local governments to band together to form regional solid waste treatment authorities, instead of each funding and operating its own waste treatment program. The incentives for local governments to band together to solve their solid waste problems is to take advantage of economies of scale in order to reduce their costs of waste management. This has been tried in Ohio, New Jersey and other states.

In the past, many of Louisiana's landfills were small, between a half ton per day and twelve tons per day. The current regulatory changes make local landfills of this size uneconomical to operate. The Statewide Regional Waste Management Plan, a report by Owens and White, indicates it is currently uneconomical to build landfills that meet the new Subtitle D Regualtions and which receive less than 500 tons of waste per day. The report states that if every parish operated their own landfill, Louisiana's cost for solid waste disposal, by the year 2000, would reach 251 million dollars per year. In the same report it is estimated that the use of regional landfills would reduce these costs to around 190 million dollars a year, a savings of over 24%. The changing regulatory environment has left many parish and municipal governments with both the need to find new solid waste treatment facilities and fighting escalating costs. These new demands are coming at a time when taxpayers are reluctant to pay additional taxes, even if it is to protect their groundwater. This dilemma leaves local governments in the difficult position of being required by law to provide superior services with few, if any, additional financial resources. Many Louisiana parishes are presently caught in this situation and are actively trying to evaluate the most efficient way to provide these upgraded

services.

Local governments solid waste problems are further compounded by the fact that most parishes no longer have local landfills and are having to ship their wastes long distances, in some cases up to 100 miles, for disposal. In addition, parishes are finding it difficult to meet the new waste reduction goals of the Solid Waste Recycling and Reduction Law to reduce the disposal of solid wastes by 25%. The development of multi-jurisdictional land treatment operations may be an answer to some or all of these problems for some parish or local governments.

Role and Authority of the State

There are two agencies at the state level involved with the development of multi-jurisdictional solid waste treatment plans and the Statewide Solid Waste Management Plan. They are the Louisiana Resource Recovery and Development Authority and the Louisiana Department of Environmental Quality.

Louisiana Resource Recovery and Development Authority (LRRDA)

The Louisiana Resource and Recovery and Development Authority (LRRDA), as previously mentioned, has the authority to form statewide solid waste regions in Louisiana. LRRDA also has the power to sell bonds to finance the development of these authorities.

LRRDA's purpose has been defined by the Legislature in R.S. 30:2303, and states the following:

> *"That a state wide regional solid waste management plan be developed and implemented by the authority to carry out the purposes of this Chapter, providing for the maximum reduction of the solid waste stream and recovery and reuse of materials and energy resources derived from solid wastes and establishing a comprehensive program for management, storage, collection, transportation, utilization, processing, and disposal of waste on a regional basis."*

LRRDA has two major responsibilities in terms of authority. The first responsibility is to adopt guidelines for region formation. Once this is completed,

the LRRDA will then exercise its responsibilities in approving each region's formation.

Secondly, LRRDA has the authority to issue bonds for activities for solid waste management services, and the planning, design, construction and operation of solid waste disposal or resource recovery facilities. The issuance of these bonds is based on the ability of LRRDA, the bonded facilities, and the local governments involved, to repay the funds. The covenants among and between the governments in the approved LRRDA region and LRRDA will dictate the availability of funds at an acceptable rate.

DEQ's Role

The role of the Department of Environmental Quality in developing multi-jurisdictional solid waste treatment plans is to provide support to parish and municipal governments in three areas. First, DEQ can provide statistical information regarding solid waste generation and disposal rates in Louisiana. Second, it can also provide technical assistance to parishes to help them determine the appropriate multi-jurisdictional approach to resolving their solid waste problems. Third, the Department will help find funding sources for local governments for the planning and establishment of regional solid waste programs. It appears that the most viable funding source for these activities is the federal Petroleum Violation Escrow (PVE) Funds. A functional integrated SWMP will produce significant energy savings, and therefore will qualify for PVE Funds. Accordingly, in 1992, a proposal was submitted to the Louisiana Department of Natural Resources (DNR) for the needed funding.

Regionalization

If regionalizing has so many benefits, why doesn't the state require regionalization for all local governments?

The development of multi-jurisdictional solid waste programs should be an answer to specific waste treatment problems which parish and/or municipal governments are having. Requiring all local and municipal governments to form solid waste regions would lead to over regulation of the solid waste markets, hinder competition and create an unneeded additional layer of government. The best

candidates for regionalization are those areas of the state where there is no longer a competitive waste disposal market.

A good example of the type of situation which might be improved by regionalization would be if several rural parishes, which have had to close their local landfill(s), were individually shipping small amounts of wastes great distances for disposal. In this case, the existing governmental jurisdictions, because of changing regulations, are no longer able to handle their wastes in an economical manner. The development of a regional transfer station, whether privately or publicly owned might solve their problems and provide them with economies of scale necessary for them to ship their wastes at a lower cost.

Regionalization can be a successful tool to solve solid waste problems such as: inefficient economies of scale for recycling, or increasing regional solid waste capacity, or reducing the costs for long range hauling to treatment facilities. While regional solid waste management can be an important tool, it is important to be aware that care must be taken in developing regional programs so they do not undermine the benefits of a competitive market place or unnecessarily create extra layers of unneeded government.

What Constitutes a Solid Waste Region?

There are many different forms that a solid waste region can take. The spectrum can range from a very rigid, formal organization with legal authority conferred upon it by LRRDA, to an informal cooperative of parishes or municipalities, which have agreed to work on solid waste issues with one another. When we discuss solid waste regions in this document, we are using this term to descrbe the full spectrum of regional authorities. The type of regions local governments develop will depend upon the needs of those parishes. As discussed earlier, the only reason for parish or municipal governments to form solid waste regions is to help them solve specific solid waste problems in the most cost effective and environmentally sensitive manner possible. Regionalization should be considered as a possible solution to specific problems.

Local governments may form solid waste regions for many different reasons. In some cases it may be because local governments need to develop a suitable Subtitle D approved landfill. In which case, they may want to build or contract with a private waste disposal firm for a new regional waste treatment facility. In other cases, several communities may band together to form a recylcing cooperative in

order to obtain the benefits of the economies of scale, or parishes could join together simply to be in a better bargaining position for contracting out their waste treatment.

It is also entirely possible to have a solid waste disposal region which overlaps with a different recycling region. A region may want to contract with one firm for waste disposal, another for household recyclables and another for tires. As these examples show, if parish or local governments decide to form a region, it should be to solve specific problems. The type of problem they want to solve will dictate the boundaries of the region, who is involved, the infrastructure needs, and the type of regional authority that needs to be developed.

What is the Function of a Regional Authority?

The function of a Regional Authority is determined by the type of region that is formed. Primary function of the authority is to provide constituent representation, guidance and decision-making activities. These activities can be very simple and basic or can become very complex and detailed, depending on the type or region formed.

The type of regional authority which is appropriate depends entirely on the needs of the local governments involved and the complexity of their solid waste treatment issues. For example, if several parishes wanted to group together to form a solid waste region, which included building a regional solid waste treatment facility, it would involve very complex negotiations and contracts between the local governments, public hearings, the development of a regional authority, and the need to sell bonds to finance the construction and operation of the treatment facility. It may even involve the signing of "put or pay" contracts, assuring that all the government entities involved send a specified amount of waste to the facility every month or pay a penalty. This type of regional arrangement would require approval from the LRRDA in order to sell bonds and would probably require contractual obligations which would last at least the length of time for which the bonds are issued. It would also involve difficult questions of liability for the wastes that were disposed at the landfill.

Other types of regional arrangements, with fewer obligations, may not require a formal regional authority. They may be nothing more than an agreement to set up a cooperative between governing bodies. An example of a less formal arrangement would be if a region were formed solely for the purpose of negotiating a recycling contract with a private waste treatment firm. This type of regional

may only require a short term contract between the facility and the government entities involved, but would not require the development of a formal regional authority.

Overcoming the Hurdle

The decision to regionalize is not an easy one for most local governments. The development of a region may require several autonimous government bodies, that have traditionally made their own solid waste treatment decisions, to work together to devise new, more effective ways of handling their wastes. It may require the delegation of powers, which had previously been the sole domain of parish or municipal governments, to a new regional authority. In addition, it can require getting approval from the LRRDA and a considerable amount of planning and solid waste expertise, which most local governments have never previously had to have. It is a daunting task. The guidance document portion of this document is written to help local governments determine when it is advantageous for them to regionalize and what to consider to get through this difficult process.

Solid Waste and Flow Control

Background

One important solid waste management issue that any multi-jurisdictional solid waste plan will encounter is "flow control." Flow control is used to ensure that solid wastes are delivered to a specific waste treatment facility. Solid Waste has long been considered nothing more than the unwanted materials of our society. There was little controversy about waste disposal until the 1970's. During the energy crisises governments sought to supplement the existing production of energy by fostering large waste-to-energy plants. (This was the impetus for the establishment of LRRDA.) Flow control was used to ensure that enough solid waste was delivered to these facilities to guarantee their operation. Many waste-to-energy facilities have been constructed throughout the country. There are none in Louisiana, even though one was attempted in Iberia Parish in the mid 1980's.

Federal guidelines through the Resource Conservation and Recovery Act (RCRA) have forced many landfills to close. This has again stimulated nationwide

interest and actions in the area of flow control. In some cases new landfills are being built, at great expense, to replace those that close. Local governments or private firms want to ensure that they will have enough waste to operate these facilities successfully. One important solid waste management planning issue is how to assure that waste will be delivered to a specific facility. This is called "flow control." What we mean by flow control are the restrictions placed on waste transportation. There are two kinds of flow control: export and import.

Export flow control is the control of a jurisdiction's wastes to a specific facility; such as, a transfer station, waste-to-energy facility, recycling facility, or compost facility. The local government requiring flow control wants to choose where and how the garbage will be recycled, processed, burned, and discarded, even if another waste facility is closer or has lower disposal costs. Export flow control has generally been used where the public sector has invested large amounts of capital in a solid waste treatment facility. The controlled flow is used to guarantee that a sufficient amount of waste is sent to the facility. This minimum amount of waste is considered necessary to pay for construction and operation. Local governments have found themselves in a "put or pay situation". If they can not "put" enough materials in a facility, they must "pay" monies to make up the loss. Flow control may also be necessary in situations where expensive waste treatment facilities are needed but none exist.

Import flow control attempts to control the import of wastes into a community. Typically, a community will attempt to stop the construction of a new waste facility by legislating that no outside waste can be brought into the community. Federal courts have been invalidating import flow control ordinances when the ordinances appear to regulate interstate commerce.

Status of Export Flow Control

The rapidly changing solid waste disposal scenario has resulted in litigation concerning where garbage can or can not go. Local governments' desire to protect their investment in solid waste processing, transfer, disposal or waste-to-energy facilities. This has resulted in efforts to legislate the flow of this suddenly important commodity....garbage. Ordinances and statutes were enacted primarily to protect the financing, construction and operation of local solid waste management projects. At least 27 states, including Louisiana, authorize regional or local officials to designate where local garbage may be delivered. The case history of export flow control is

contradictory. Local government cases have been upheld, especially where the issues have had no relation to interstate commerce. Recent court decisions have been made on both sides of the issue. In 1992, a U.S. District Court upheld the City of Auburn, Maine. Auburn was prohibiting haulers from skimming recyclables from commercial waste. A local flow control ordinance required these wastes be sent to a waste-to-energy facility. Other cases which support export ban are: a 1988, New Jersey case, *Filberto Sanitation v. State of New Jersey;* a 1982, Ohio Case, *Hybud Equipment Corp. v. City of Akron;* and, a 1985, Delaware Case, *Harvey & Harvey v. Delaware Solid Waste Authority.* On the other hand, the U.S. District Court struck down portions of a Martin County, Minnesota, adopted ordinance, that required all compostable material go to a joint government (Praireland Solid Waste Board) bonded and constructed, state-of-the-art composting facility. Other invalidation of export control laws are: a 1992, Rhode Island Case, *DeVito Trucking v. Rhode Island Solid Waste Management Corporation;* a 1992, North Carolina case, *Container Corporation of Carolina v. Mecklenberg County;* and a 1993, Alabama case, *Waste Recycling, Inc. v. Southeast Alabama Solid Waste Disposal Authority.*

The Supreme Court is expected to rule in the spring of 1994, on the case of *C.A. Carbone Inc. v. Clarkstown, N.Y.* , a case where Clarkstown ordered waste haulers to take all trash to a new town transfer station. Carbone was caught hauling to a cheaper site.[1]

Flow Control-Import Restrictions

This has been a popular and generally failed attempt by state and local governments to prohibit or restrict the disposal of out-of-state waste in private landfills. Clearly, local and state government have limited authority in import restrictions for the operation of private landfills. It is neither the intent of the Department nor an objective of the Solid Waste Management Plan to intrude into controlling the industrial, on-site landfills or privately owned landfills. In these cases, the Supreme Court has clearly ruled against the import bans and has defined solid waste as a commodity, subject to the provision of the Commerce Clause of the Constitution. (*Philadelphia v. New Jersey* (1979), *Fort Gratiot Sanitary Landfill v. Michigan Department of Natural Resources* (1992) and *Chemical Waste Management, Inc. v. Hunt* (1992).[1]

Flow Control Options Available

There are several ways to control the flow of solid waste without involving mitigating circumstances. One way is by using a Structured Fee System: Local governments owning a landfill may charge "non-residents" a higher fee when the local government is a market participant rather than a regulator. Lycoming County, Pennsylvania, charged a higher fee to out-of-county residents. This was upheld by the Third Circuit Court because the County was determined to be a market participant, not a regulator, and not subject to the limits of the Commerce Clause.*(Swin Resources Systems v. Lycoming County, 1989)*[2]

Another method of control is via Contract Terms: The basic control mechanisms, which local governments have, are contractual arrangement(s) with haulers. These contracts can have a disposal requirement with "franchised" hauler(s). We have not found a case which successfully challenged the utilization of contractual arrangements between the local government and the disposal firm(s). The Supreme Court decided in *California Reduction Company v. Sanitary Reduction Works* (1905), that the City of San Francisco could grant an exclusive franchise to collect all garbage in the city and take it to a city designated site.[1] Here, the flow control provisions can be enforced through contractual terms. Louisiana law specifically states in Section 4169.1:

> A. The governing authority of every parish or municipality shall have the following powers:
>
> (1) To engage in the collection and disposal of garbage and trash within its jurisdiction in cooperation with, or to the exclusion of, other garbage and trash collectors.
>
> (2) To grant permits, licenses, exclusion or nonexclusive franchises, or any combination thereof, to garbage and trash collectors and disposers."

Redefine Interstate Commerce: There is considerable pressure on Congress to pass legislation that will clearly allow export bans and allow some specific state import restrictions. Legislation has already been introduced, HR1357, which will revise Federal laws giving more authority to local government flow control ordinances that seek to protect local government capital investments. Local governments may wish to contact the Congressional delegation and provide their views and wishes.[3]

[1] Peterson, Eric S., "Whose Waste It Is Anyway? Assuring Flow Control for Municipal Waste Processing Facilities"

Paper from U.S. Conference of Mayor's, Municipal Waste Management Association Conference on Waste Management Issues, Pittsburgh, PA, 1992.

[2] Ewel, Dexter, "Flow Control and Waste Import Bans", *BioCycle,*, p36-39, March 1993.

[3] Powell, Jerry ,"Recycling and the Law: the Flow Control Battle".*Resource Recycling*, p35-38, September 1993.

The SWMP program is a voluntary planning program to help local governments determine whether it is in their best interest to form multi-jurisdictional solid waste collection, transportation and treatment programs. It involves a one-time planning grant available to the Louisiana Association of Planning and Development Districts to help determine the advantages and disadvantages of regionalizing solid waste treatment in their region. Additional funding may be made available for implementation of regional programs for those governments which decide to join together to form regions. The Department of Environmental Quality will also offer technical and seek financial support for those local governments desiring to develop multi-jurisdictional programs.

Louisiana Program

Many other states, besides Louisiana, are experimenting with regionalization. States such as Ohio, New Jersey, and Missouri have required that their counties form solid waste treatment regions. Ohio allowed their counties to form their own regions while, the State of Missouri assigned their counties to regions. Other states such as Texas and Mississippi have solid waste planning requirements for their counties which require the analysis of their waste streams and their existing solid waste facilites and organizations before preparing regional solid waste plans.

Louisiana, contrary to other states such as Ohio, is not suffering from a shortage of solid waste capacity. Based on available records, Louisiana has approximately ten years of remaining landfill capacity. Our reason for advocating regionalizing is primarily to ensure that all of the state's local governments have efficiently priced, integrated solid waste treatement available to them. The state has already had some defacto regionalization occur, primarily due to closure of 97% of our landfills since 1981. This de facto regionalization has not solved all of the state's solid waste problems nor has its effects been distributed equally across the state. There are many parishes in the central part of the state which have to ship their wastes great distances for disposal. While the state as a whole has sufficient solid waste disposal capacity, parishes such as St. Bernard and Orleans do not have adequate disposal capacity and will either have to ship their wastes great distances or develop new regional solid waste treatment facilities.

In addition, many parishes are having a great deal of difficulty meeting the

goal of the Louisiana's Solid Waste Recycling and Reduction Law, R.S.30:2411-2423, which has the mandated goal of reducing solid waste disposed in landfills in Louisiana by 25%. Regionalization can be an effective way to develop new, economically efficient solid waste treatment programs which meet the state's waste reduction goals.

In order to determine the type of program that is best suited for the existing solid waste conditions in Louisiana, the Department met with private and public solid waste facility operators, mayors, police jurors, and with other states. Much of the disucssion at these meetings centered on the fact that regionalization was already occurring in the State's solid waste market, and that we did not have many of the problems driving other states.

The Department is of the opinion that requiring mandatory planning regions is not necessary. In some cases, it would only add another layer of bureauracy without adding any efficiency. This led to the decision to make SWMP a voluntary planning program. The area where the Department of Environmental Quality can add the most value to the process is in providing some initial planning funds for local governments in helping them evaluate their regional planning options.

Background and Statistical Information on Solid Waste Management in Louisiana

The following data has been prepared by the Department of Environmental Quality to help local governments determine their future waste treatment and recycling needs.

Both national and state wide trends point toward the need for states to better plan for the minimization, collection, transportation, treatment and ultimate disposal of their solid wastes, particularly in the area of Municipal Solid Waste (MSW). Data has shown that over the past decade, the MSW stream (in millions of tons/year) has increased approximately 122.9% from 1960 (87.8 million tons/yr) to 1990 (195.7 million tons/yr). This figure has been projected to increase to 222.1 million tons/year by year 2000.

On a per-capita basis, (pounds/person/day), MSW generation in the United States has increased approximately 59.3% from 1960 (2.7 lbs/person/day) to 1990 (4.3 lbs/person/day). This figure is expected to increase to 4.5 lbs/person/day by year 2000. Figure 1 on the following page illustrates these increases.

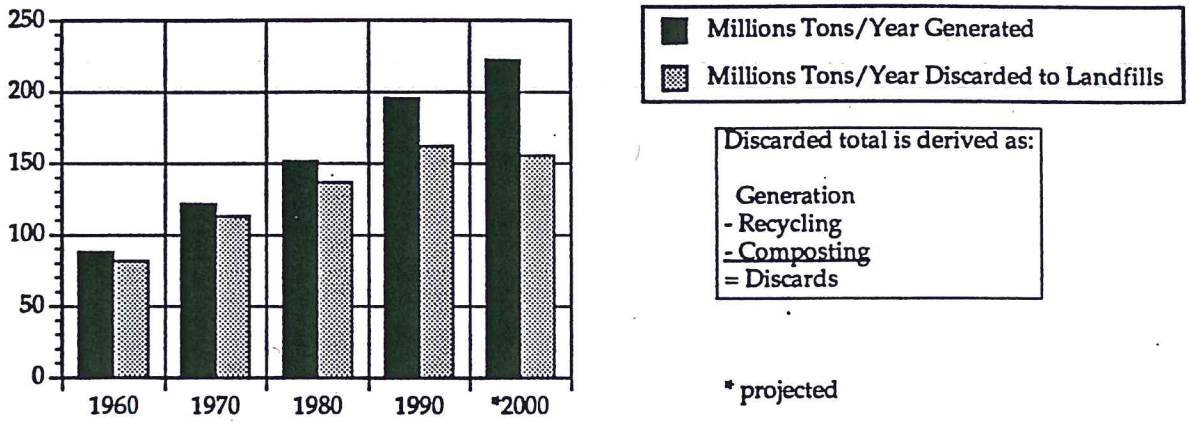


Figure 1 U.S. Municipal Solid Waste Generation and Discard (to Landfill) Amounts for 1960 - 2000.

Source: U.S. EPA, 1992

From a Louisiana-specific perspective, the generation rates are very similar, and since this report has a scope that covers more than that of just MSW, recent and projected data consisting of both municipal and industrial solid waste generation rates in Louisiana for years 1990 and 2000 are shown in Figure 2 below.

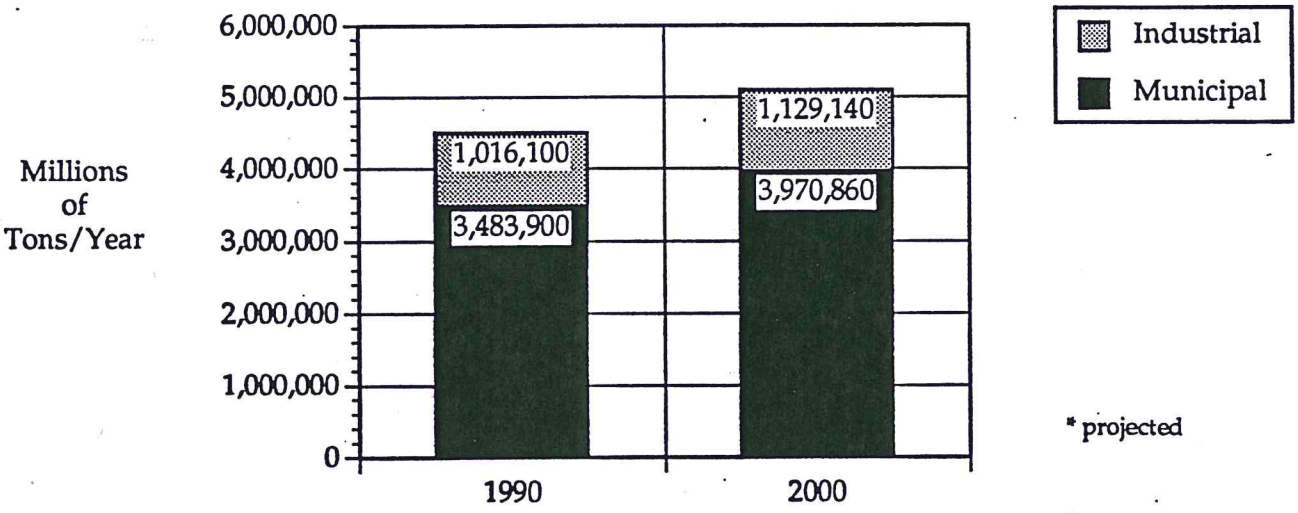


Figure 2 Municipal and Industrial Solid Waste Generation Rates in Louisiana for 1990 and 2000.

Source: Owen and White, Inc., Consulting Engineers, 1991.

Again, taking the data a step further, the per-capita generation rates of municipal and industrial solid waste generation in Louisiana, on a pounds/person/day basis, are shown in Figure 3 below.

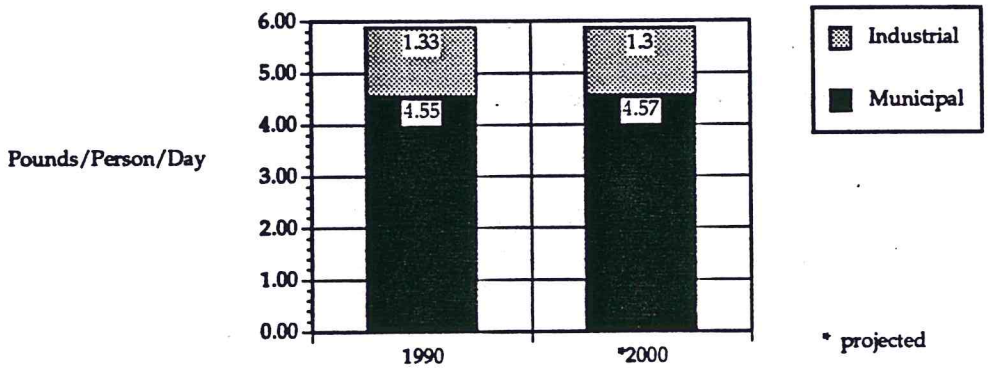


Figure 3 Municipal and Industrial Solid Waste Generation Rates in Louisiana in Pounds/Person/Day for 1990 and 2000.

Source: Owen and White, Inc., Consulting Engineers, 1991.

In the last four years alone, there has been a significant decrease in available landfills on a nation wide basis. Figure 4 below shows that the number of available landfills in the U.S. decreased from 8,000 in 1988 to 5,812 in 1991 (27% decrease).

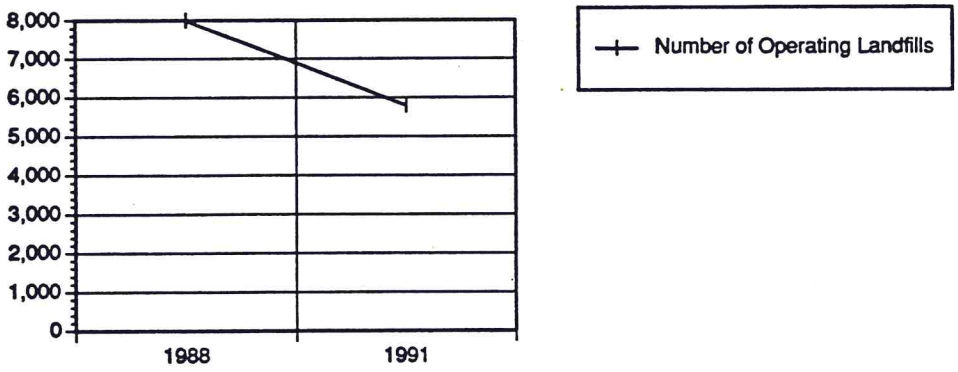


Figure 4 Landfill Availability in the U.S. from 1988 - 1991.

Source: Environmental Almanac, 1993.

Our own state data is more extreme, showing that the number of available disposal sites in Louisiana has been decreasing more rapidly as a result of a Legislative mandate requiring the closure of "open dumps." Figure 5 below shows that operating landfills in Louisiana have decreased from 850 open dumps in 1981 to 26 permitted operating landfills today; an over **97% decrease.**

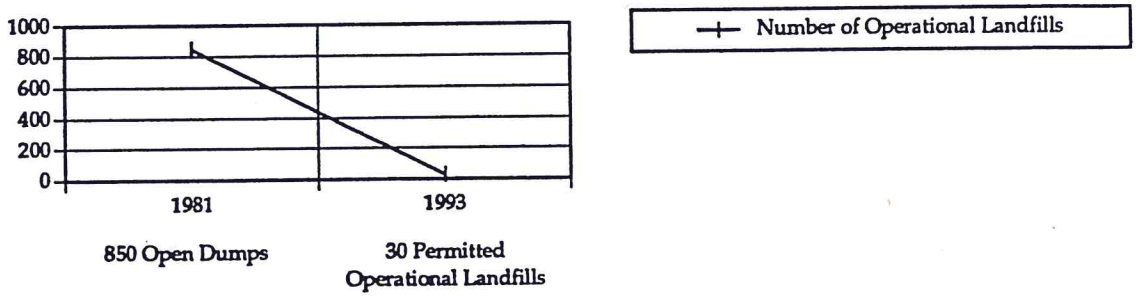


Figure 5 Operational Landfill Availability in Louisiana from 1981 to Present.

Source: Louisiana Department of Environmental Quality, 1993.

The significant decrease in the number of Louisiana's available landfills has, in a limited sense, created a regionalization of solid waste management. Figure 6 on the following page is a map showing where each parish's waste is currently being disposed. This information is also provided in a list format in Table 1 on the following page.

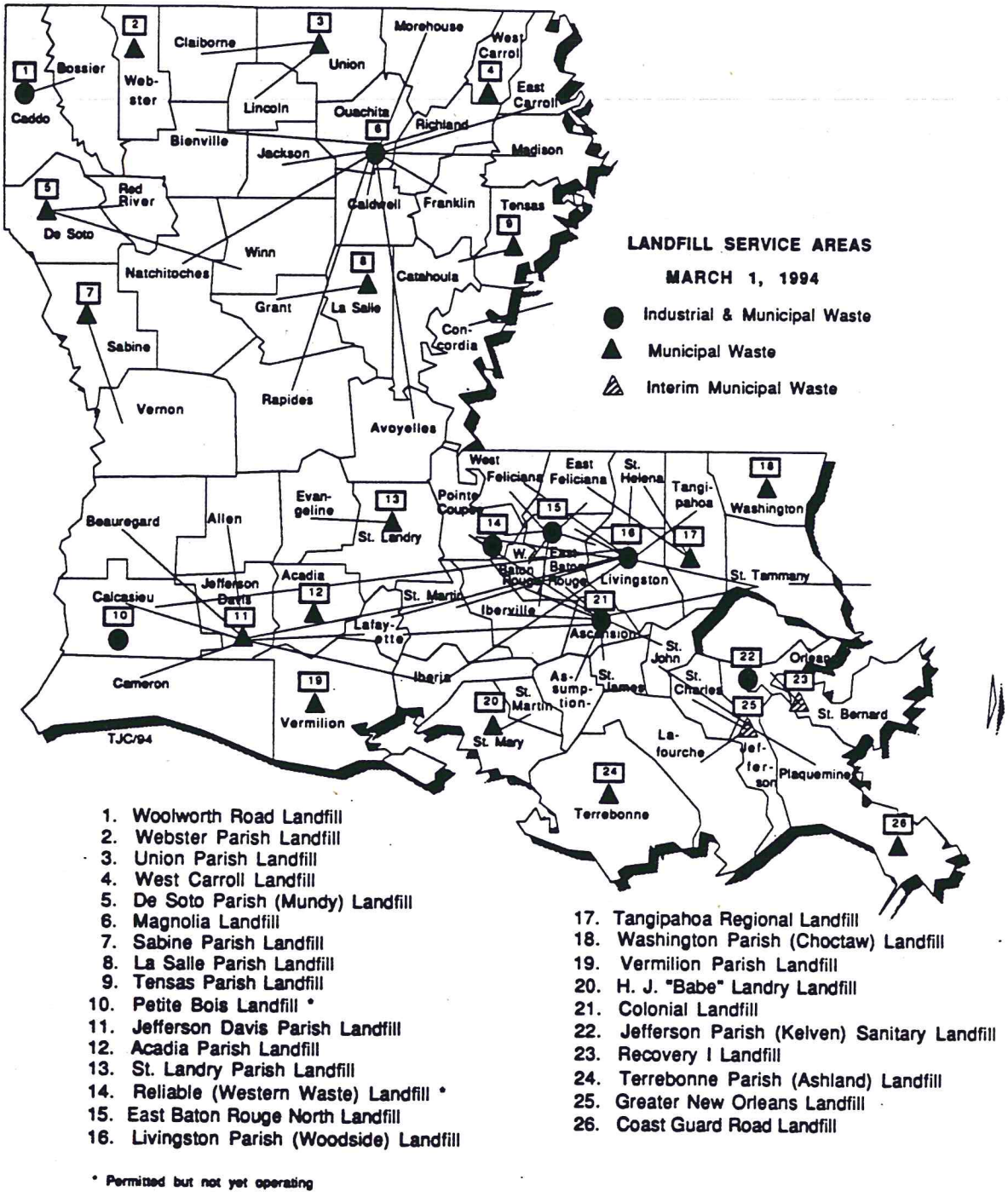


Figure 6 Map of the Flow of Solid Waste in Louisiana at Present (1994).

Source: Owen and White, Inc., Consulting Engineers, 1991, updated by LDEQ, 1994.

Table 1

Permitted Operating Landfills in Louisiana and the Parishes They Service at Present (1994)

Landfill	Parish
1. Woolworth Road	Caddo
	Bossier
2. Webster Parish	Webster
3. Union Parish	Union
	Claiborne
	Lincoln
4. West Carroll Parish	West Carroll
5. Mundy	Desoto
	Red River
	Winn
6. Magnolia	Ouachita
	Avoyelles
	Bienville
	Caldwell
	Catahoula
	East Carroll
	Franklin
	Jackson
	Madison
	Morehouse
	Natchitoches
	Rapides
	Richland
7. Sabine Parish	Sabine
	Vernon
8. LaSalle Parish	LaSalle
	Grant
9. Tensas Parish	Tensas
	Concordia
10. Petit Bois*	Calcasieu
11. Jeff Davis Parish	Jeff Davis
	Allen
	Beauregard
	Calcasieu
	Cameron
	Iberia
	Lafayette
	St. Martin
12. Acadia Parish	Acadia
13. St. Landry Parish	St. Landry
	Evangeline
14. Reliable*	Point Coupee
15. North Landfill	East Baton Rouge
	East Feliciana
	Iberville
	Livingston
	Point Coupee
	West Baton Rouge
	West Feliciana
16. Woodside	Livingston
	Iberia
	Lafayette
	Point Coupee
	St. Helena
	St. Martin
	West Feliciana
	Tangipahoa
17. Tangipahoa Regional	Tangipahoa
	East Feliciana
	St. Helena
18. Washington Parish	Washington
19. Vermilion Parish	Vermilion
20. H.B. Landry	St. Mary
21. Colonial	Ascension
	Assumption
	East Baton Rouge
	Iberville
	Lafayette
	Point Coupee
	St. James
	St. John
22. Kelvin	Jefferson
23. Recovery I	Orleans
	St. Tammany
	St. Bernard
24. Terrebonne Parish	Terrebonne
25. Greater New Orleans	Jefferson
	Lafourche
	Plaquemines
	St. Charles
26. Coast Guard Road	Plaquemines

* Permitted but not yet operating.

DEQ has six Solid Waste Regional Office Districts that are responsible for the 26 permitted landfills currently in operation. These offices, and the parishes located in each district, are shown in the map in Figure 7 below.

1 NORTHWEST REGIONAL OFFICE
(318)676-7476

2 NORTHEAST REGIONAL OFFICE
(318)362-5439

3 ACADIANA REGIONAL OFFICE
(318)262-5584

4 CAPITOL REGIONAL OFFICE
(504)295-8583

5 SOUTHEAST REGIONAL OFFICE
(504)838-5347

6 SOUTHWEST REGIONAL OFFICE
(318)475-8644

Figure 7 DEQ Solid Waste Regional Office Districts.

Source: Louisiana Department of Environmental Quality, 1994.

In association with decreasing landfill availability, the cost to dispose of solid wastes in landfills on a nation wide basis appears to be increasing. Average landfill tipping fees in the U.S. have risen approximately 145.9% over the last 10 years; from $10.80 per ton in 1982 to $26.56 per ton in 1990. Figure 10 below illustrates this trend.

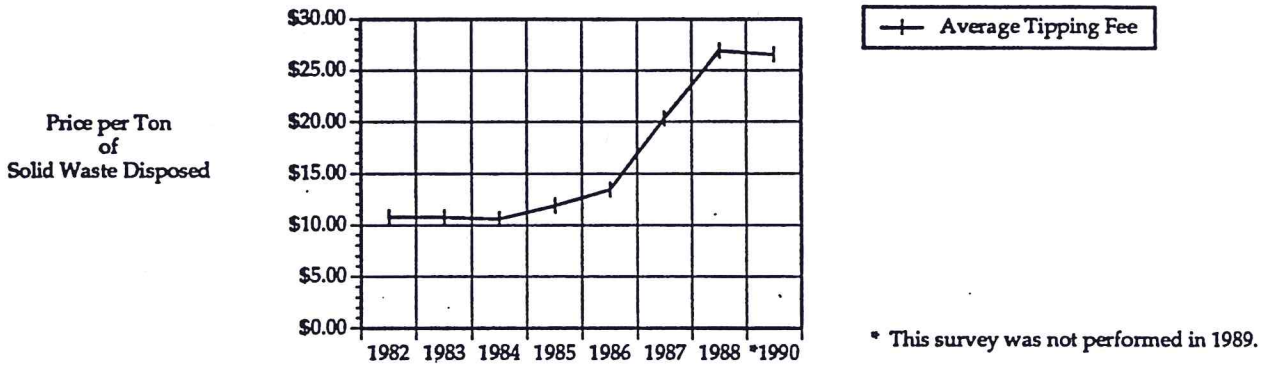


Figure 8 Average U.S. Landfill Tipping Fees from 1982 - 1990.

Source: National Solid Wastes Management Association (NSWMA), 1991.

In Louisiana, the current average landfill tipping fee for solid waste disposal is approximately $15.00 per ton. Figure 11 below illustrates the comparison of Louisiana's average landfill tipping fee with that of the U.S..

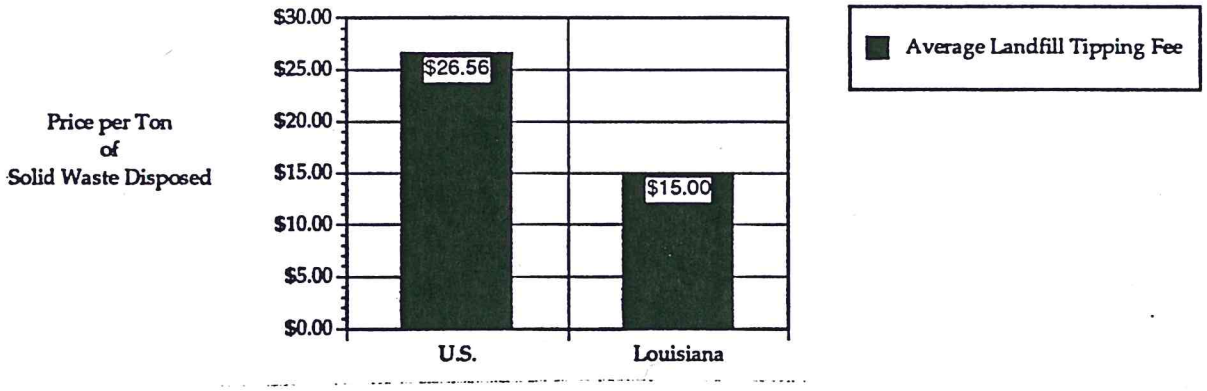


Figure 9 Comparison of Average Landfill Tipping Fees in the U.S. and Louisiana in 1993.

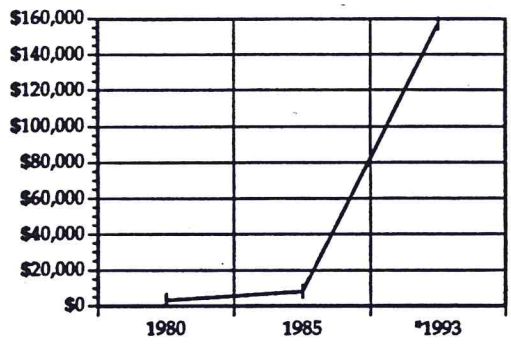
Source: National Solid Wastes Management Association (NSWMA), 1993 (U.S. data) and the Louisiana Department of Environmental Quality, 1993 (Louisiana Data).

One other very important trend in the realm of solid waste disposal is the increasing costs associated with the construction of solid waste landfills. In Louisiana, these costs are estimated to have risen over 4,700% by the end of 1993 (from a base year of 1980). Construction costs for landfills in Louisiana in 1980 averaged $3,266/acre, and are estimated at $157,000/acre in 1993. Figure 10 below illustrates this exponential increase.

It should be emphasized that the huge increase in costs associated with landfill construction in our state in 1993 are a direct result of RCRA Subtitle D federal regulations for solid waste. Louisiana's Solid Waste Regulations, which went into effect on February 20, 1993, basically adhere to the federal standards. Briefly, more stringent rules were mandated for items such as double liners, monitoring wells, leachate collection systems, closure and post-closure care, and financial assurance criteria, just to name a few. These additional requirements will make construction and maintenance costs substantially higher.

Supporting this fact, the National Solid Waste Management Association (NSWMA) has stated **"an increase in the number of corporate-run landfills will be unavoidable, since those are the only groups that could afford to build and run them," and "the estimated costs of building and maintaining a landfill that adheres to the new EPA regulations run near $125 million, with up to 55% of that amount going for taxes, insurance, and the like."** (Environmental Almanac, 1992)

With these alarming trends, states are now being urged to provide for the proper planning and management of its citizens' solid wastes. And central to the planning process is the concept of "regionalization of solid waste management."



* This projected 4,700% increase in costs is caused primarily by the impact of Federal Subtitle D Solid Waste Regulations.

Figure 10 Landfill Construction Costs in Louisiana.

Source: Louisiana Department of Environmental Quality, 1993.

REGIONAL PLAN DEVELOPMENT

This detailed outline is to assist local governments through the process of developing a Solid Waste Region and determining the type of regional MSW facility(ies), if any, that the region wishes to build. This is a flexible outline for the users to modify, to fit their own situation.

A. Preliminary

1. Designate intergovernmental working group. (Attach resolution from governing bodies approving composition of region and appointing group membership.)

2. Designate Advisory Committee. The Regional Authority should establish a Regional Projects Advisory Committee whose function will be to assist in the promotion of Regional Projects, provide advice on the community response/desires in Regional Projects, serve as a forum for ideas, assist in the development of the regional project plan. The Regional Projects Advisory Committee should comprise a broad representation of the region and should include an equal representation of industry, private waste haulers (both corporate and individual), small business, citizens with environmental interests, educators and civic leaders.

3. Determine region size/composition. A list of the local governments comprising the region and the geographic boundaries thereof.

4. Establish General Goals, Objectives and Tasks. There should be an initial development of preliminary goals, objectives and tasks for the intergovernmental working group.

5. Obtain Public Input. The Regional Authorities should disseminate meeting notices and provide opportunity for public comment and public hearings on plans.

B. Initial Analysis. This section will provide the necessary information for demonstrating the existing circumstances and the needs of the region. The gathering of this data will help support the proposed activities in a logical and

orderly manner. Each topic within this section should address the characteristics listed and especially those which are of a unique nature and would present a specific impact on the waste management activities being proposed. (The LSU Institute for Recyclable Materials and the Louisiana Geological Survey can be very helpful in determining these characteristics for the purposes of this document.)

1. Collect Background Information

a. Population Data and Projections. Describe the current demographic characteristics of the region, including the number and population of cities and parishes, population densities, significant historical trends, and any other demographic information having planning implications. Population projections for each planning period also should be presented. The source of all maps and demographic information should be documented.

Population and demographic data can be obtained by calling DEQ, Solid Waste Division at 504/765-0249 or referring to census data on file at parish and state libraries.

b. MSW Stream Description. (include actual disposal costs) The purpose of this section is to identify and document exactly what is being utilized for the management of solid waste in the region and the adjacent areas as well. It may also provide the opportunity to identify better coordination of current activities for future planning purposes.

This section should include a complete inventory and description of the current solid waste management system for the region and, if applicable, a description of solid waste management systems for adjacent regions or states as they impact the region. This information will provide the basis for the system assessment which is recommended.

i. Roles, Responsibilities, and Institutional Arrangements. Identify and describe all agencies authorities, districts, organizations, programs (including educational), and regulations, including those outside the region where applicable, which affect the management of all types of municipal solid waste within the region. Include the specific solid waste management responsibilities currently being performed, and any contractual or institutional arrangements in place, categorized by type of waste managed for each entity. Identify any areas within the region where

waste collection services are not available. Define roles of local governments, particularly in unincorporated areas and in the extraterritorial jurisdiction of cities.

During the time period of 1990-1992, DEQ and the Department of Natural Resources initiated the Statewide Recycling Awareness Program. That program resulted in the establishment of several recycling programs throughout the state. DEQ has compared the diversion rate of material as a result of that program for the year ending 12/31/92 to the generation data for the same time period. The results are that the state, as a whole, has attained only a 1.4% reduction in solid waste generated, and the greatest rate of reduction for any planning district is only 5.7%. While DEQ recognizes that recycling will not serve as the panacea for solid waste problems, a lot of room for improvement and development does exist. Activities which may have inadvertently been omitted need to be documented in order to realize the full benefit of those efforts.

Identify public and private sector responsibility and involvement in managing special waste such as sludge, septic waste, tires, batteries, oil and household hazardous waste. Also consider medical waste, asbestos and grease trap waste, as applicable, and industrial solid waste that is processed or disposed in municipal solid waste facilities.

ii. Solid Waste Characterization. A regional plan may utilize EPA's figures from the Characterization of Municipal Solid Waste in the United States - 1992 Update - Final Report, July 1992. The major components of this report are reproduced in tabular and graphical form in its entirety as Appendix A.

The region may contract for an independent study on the waste stream characterization. Such contract work would include a series of statistically sound sampling procedures from various locations within the region. If this method is chosen, details of the study should be included in this topic, as well as submittal of a copy of the study in its entirety.

In preparation of the municipal solid waste characterization portion of a region's SWMP, Form #1 (depicted on page 30) should be used. Note that EPA figures are already listed on the form, therefore, if the region chooses not to perform its own study, it would simply write the word "same" in the corresponding blank.

Other components of the non-industrial portion of the waste stream (such as waste tires, used oil, construction and demolition debris, etc...) need not be listed with specific rates, since this information may not be readily available. Likewise, industrial waste components do not need to be broken down. Industrial waste generation should be taken as a whole for each parish/region.

iii. Solid Waste Management Activities and Programs. List and describe all entities within, or outside, the region having responsibilities for, or a role in, solid waste management, categorized by their respective management activities and/or programs. Particular emphasis should be placed on resource conservation and recovery activities, and relevant market details, in relation to implementation of an integrated approach to solid waste management.

iv. Currently Planned Facility Expansions. Describe any currently planned new facilities or facility expansions, including those outside the region, which would improve the solid waste management system. Include the type of facility, location, managing entity, expected benefits to the current system, types of waste involved, costs, and financing methods, and any other relevant information.

v. Currently Planned Solid Waste Management Activities and Programs. Describe any activities and programs, including those outside the region, which are currently planned to improve the current solid waste management system (such as market identification and/or development activities, composting and recycling programs, information and education programs, household hazardous waste collection programs, etc.). Include what is planned, the responsible entity, location, costs, expected benefits, timetable, and any other relevant information. If this information is too bulky or voluminous to publish in detail, then it should be put in summary or matrix form, with a contact person and phone number given, so that more information can be obtained.

c. Economic and Fiscal Analysis. The Regional Planning and Economic Districts and Chambers of Commerce should be able to provide substantial

data on the economic profile of the region and the fiscal health of the governments involved.

d. Geography of region. Provide a description of the physical characteristics of the region which may affect solid waste management, including the geographic area, climate, geology and hydrology, geography, land use and transportation arteries. Document the sources of all maps, physical information and data used.

e. Determine MSW needs of Region. This section should evaluate the current solid waste management system(s) inventory, described in the preceding section, as they relate to current system goals, objectives, and priorities. (This will allow the region to determine which activities are working appropriately and focus the areas that need developmental assistance.)

Discuss the anticipated impact of future landfill closures and projections of future waste streams on the current system, including facility capacities, and make determinations regarding current and estimated future system activity and facility needs. Identify areas where improvements are needed or barriers exist.

f. Current Landfill Capacities and Capacity of Existing Solid Waste Management Facilities. Describe the estimated capacities of existing solid waste management facilities which are important to the regional solid waste management system. Where applicable, remaining useful life, remaining capacity or expected closure dates also should be discussed. Where disposal facilities outside the region are used for wastes exported from the region, remaining capacity or expected closure dates also should be presented.

2. Prioritize MSW management options. Priorities for the management of solid waste should include the elements of preferred management methods, ranging from most preferred to least preferred for each of the two waste categories of municipal and industrial wastes. Provisions and priorities should be made of all categories of MSW and topics addressed should include:

a. Waste reduction
b. Recycling

c. Composting
d. Waste to Energy
e. Special Wastes
    i. tires
    ii. batteries
    iii. white goods
    iv. motor oil
    v. white goods
e. Collection and transfer
f. Landfill
g. Enforcement (ordinances, contractual)
h. Administration of Regional Authority.

C. Develop Action Plan (Year Period)

1. Specific Goals and Objectives for Plan. (MSW hierarchy) The recommended goals, objectives, and priorities should address: the preferred management methods for solid waste, sludge and other applicable wastes; facilities and practices; market issues; intergovernmental cooperation; regulatory compliance; and other important regional issues .

2. Include Public and Advisory Committee Participation. Summarize the public input and public hearings on the Action Plan.

3. Specific Actions and Responsibilities. Include a comprehensive description of specific actions which are recommended to implement regional goals, objectives, and priorities related to solid waste management.

4. Implementation Plan

a. Location of proposed facilities. Estimates of the additional facilities needed, including associated costs, should be quantified for each planning period and reflect current management practices. Provide qualitative assessments for those facilities where quantification is not possible.

b. Delivery logistics. Describe the network of MSW collection, transfer and separation facilities, recycling collection centers that will need to be created to support new regional facilities. Determine which alternatives are

economically beneficial.

c. Timetable. Project planned phases and dates for implementation of the plan. (May be presented as "approval or funding" plus 30 days, plus 60 days, etc.)

5. Monitoring Plan and Evaluation Plan. Designate how or who is going to be actively responsible for keeping plan implementation on schedule, for monitoring costs, and making adjustments to maximized cost effectiveness.

D. Financial Plan

1. Costs of Implementation. Prepare a schedule that includes a ten year operating and capital cost assessment and a twenty year needs and opportunities plan. The financial plan should address financing capital costs and operating costs of any proposed solid waste management system. The utilization of a CPA experienced in government accounting standards and a financial analyst is recommended as appropriate.

2. Borrowing requirement and source(s).

3. Funding options.

a. Tipping fees
b. User charges
c. General tax revenue support.
d. Put or pay obligations.

E. Participating governments endorsement. Formal adoption of the completed plan by the governing authorities of the local governments.

F. Select Form for Region. The governments involved should formalize their union through some type of agreement, contract, or Memorandum of Understanding. This agreement should:

1. Be approved by the appropriate governing bodies;
2. Address the planned purpose for the region, and;
3. Determine the structure required to meet the purpose of the region.

The following examples are offered as possible mechanisms to employ.

1. **Informal Agreement.** Local governments agree to consult on solid waste activities and possibly develop joint programs.
2. **Joint Powers Agreement.** Local governments form an joint agency with limited powers however, direction is still from the governing bodies of the local government.
3. **Special Purpose District.** Addresses special needs in district, has some statutory creation, however, does not override local authorities.
4. **Contract agreements.** Local governments agree to contract delivery or disposal at a specific facility
5. **Formulation of a LRRDA Region.** This process establishes a separate political district that can coordinate, finance, operate, provide solid waste service, or a combination thereof. The role of a LRRDA Region could range from construction, financing and operation of the facility by the local regional authority with little oversight from LRRDA to total operation and responsibility assumed by LRRDA. It is recommended that preliminary discussions be held with LRRDA/DEQ staff and the cooperating governments to determine the needs and options available.

Form #1

Municipal Solid Waste Stream Characterization of the Region

Material	Current % of Total Generation (year ____)		Current Tons/Yr Generated (year ____)
	EPA Data (year 1990)	Region Data	
Food Wastes	6.7	_____	_____
Glass	6.7	_____	_____
Metals (total)	8.3	_____	_____
Aluminum	(1.4)	(_____)	_____
Ferrous Metals	(6.3)	(_____)	_____
Other Nonferrous Metals	(.6)	(_____)	_____
Paper/Paperboard	37.5%	_____	_____
Plastics	8.3	_____	_____
Rubber and Leather	2.4	_____	_____
Textiles	2.9	_____	_____
Wood	6.3	_____	_____
Yard Trimmings	17.9	_____	_____
Misc. Inorganic Wastes	1.5	_____	_____
Other	1.6	_____	_____
Total	100.0	_____	_____

CHECKLIST FOR REGIONAL PLAN DEVELOPMENT

This list is designed to assist local governments through the process of developing a Solid Waste Region and determining the type of regional MSW facility(ies), if any, that the region wishes to build. This is a flexible listing for the users to modify, as applicable to their own situatiuon.

Date Completed

_____A. Preliminary

_____1. Designate intergovernmental working group.

_____ 2. Designate Advisory Committee.

_____ 3. Determine region size/composition.

_____ 4. Establish General Goals, Objectives and Tasks.

_____ 5. Obtain Public Input.

_____ B. Initial Analysis.

_____ 1. Collect Background Information
- _____ a. Population Data and Projections.
- _____ b. MSW Stream Description.
- _____ c. Economic and Fiscal Analysis.
- _____ d. Geography of region.
- _____ e. Determine MSW needs of Region.
- _____ f. Current Landfill Capacities.

____ 2. Prioritize MSW management options.
- _____ a. Waste reduction
- _____ b. Recycling
- _____ c. Composting
- _____ d. Waste to Energy
- _____ e. Special Wastes
  - ____ i. tires
  - ____ ii. batteries
  - ____ iii. white goods
  - ____ iv. motor oil

____ v. white goods

_____ e. Collection and transfer

_____ f. Landfill

_____ g. Enforcement (ordinances, contractual)

_____ h. Administration of Regional Authority.

____ C. Develop Action Plan (__ Year Period)

_____1. Specific Goals and Objectives for Plan. (MSW hierarchy)

_____2. Include Public and Advisory Committee Participation.

_____3. Specific Actions and Responsibilities.

_____4. Implementation Plan.

_____a. Location of proposed facilities.

_____b. Delivery logistics.

_____c. Timetable.

_____5. Monitoring Plan and Evaluation Plan. ness.

_____ D. Financial Plan

_____1. Costs of Implementation.

_____2. Borrowing requirement and source(s).

_____3. Funding schemes.

_____ a. Tipping fees

_____ b. User charges

_____ c. General tax revenue support.

_____ d. Put or pay obligations.

_____ E. Participating governments' endorsement.

_____ F. Select Form for Region.